

**27 MARCH 2000**



**Maintenance**

**FACILITY PAINT PROCEDURES FOR  
MISSILE COMPLEX**

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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(SSgt Southon)

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Certified by: 341 LG/CC  
(Colonel Harry J. De Vault)

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This instruction establishes guidance and procedures for the standardization of color scheme throughout the Malmstrom Air Force Base missile complex. It implements the general guidance contained in AFD 21-1, *Managing Aerospace Equipment Maintenance*, and AFSPCI 21-105, *Air Force Space Command Corrosion Program*, for the treatment and prevention of corrosion on aerospace ground equipment (AGE) and assigned real property installed equipment (RPIE). It applies to the 341st Space Wing and subordinate units, and all units assigned or attached to, or supported by Malmstrom AFB.

**SUMMARY OF REVISIONS**

This revision changes paint requirements (attachments 1-5) and deletes paint index numbers 3, 27, 30, 37, 38, and 39. A bar (|) indicates a revision from the previous edition.

**1. General.** Intercontinental Ballistic Missile facilities must be functional and meet acceptable standards of cleanliness. This instruction is published to comply with AFI 21-105, *Aerospace Equipment Structural Maintenance*, and provides a well coordinated standard color scheme for all missile alert facilities (MAF), launch facilities (LF), and missile training facilities. Specifically, this instruction:

- 1.1. Follows present color schemes, if practical.
- 1.2. Indicates top coat colors for all major surface areas.
- 1.3. Identifies all major surfaces not to be painted.
- 1.4. Specifies complete coating systems for real property (RP) and RPIE when they are not specified in weapon system technical orders.
- 1.5. Selects materials from TO 21M-LGM30F-101, *Weapon System Corrosion Control Treatment*, and identifies them by specification number.

1.6. Does not contain instructions for surface preparation of paint applications. This can be found in TO 21M-LGM30F-101.

**2. Policy.** When discovered, corrosion will be properly treated using applicable technical data. If the corrosion cannot be treated at time of discovery, it will be documented for corrective action to be accomplished at the earliest possible date.

### **3. Responsibilities .**

3.1. 341st Logistics Support Squadron Scheduling Control (341 LSS/LGLOS) will:

3.1.1. Schedule spot treatment and painting of all AGE and assigned RPIE and RP by corrosion control specialists and teams.

3.1.2. Arrange escorts for contractor painting teams when below grade entry to the launch facility is required.

3.2. 341st Maintenance Squadron (MXS) will:

3.2.1. Provide corrosion control teams for performance of Periodic Maintenance Dash Six inspections.

3.2.2. Schedule spot treatment and painting of all AGE and assigned RPIE and RP by corrosion control specialists and teams.

3.2.3. Corrosion Control Teams (CCT) will:

3.2.3.1. Treat corrosion as specified by technical data.

3.2.3.2. Perform a 720-day Dash Six corrosion inspection IAW TO 21M-LGM30F-101 and associated work cards of all AGE, RP, and assigned RPIE at LFs and MAFs on a scheduled basis. (Exceptions: Elevator and elevator shaft.)

3.2.3.3. Provide spot corrosion treatment on AGE, RP, and assigned RPIE at LFs and MAFs. Inside launch tube liner work, done in conjunction with Missile Maintenance Team work, limited to hand sanding and wire brushing of corrosion with brush or roller application of paint coats.

3.3. 341st Civil Engineer Squadron (CES) will contract for treatment and painting of all RP and assigned RPIE, on an as required basis.

### **4. Painting Program.**

4.1. The painting program consists of unscheduled and scheduled painting.

4.2. Unscheduled painting is:

4.2.1. Performed by 341 MXS corrosion control specialists and teams during scheduled visits to facilities. Actions consist of spot treatment and painting of corroded area or areas that are paint chipped and gouged for the treatment and prevention of corrosion on AGE and assigned RPIE.

4.2.2. A medium or large scale effort performed by 341 CES contractors as a result of fire, flood, or other unforeseen cause, with 341 MXS assistance as required.

4.2.3. Painting that may be performed by facility managers and missile combat crew members (MCCM) for self-help projects when authorized by the appropriate squadron commander. (Painting of RPIE equipment requires prior approval of 341 CES/CC.) Replacement of all deteriorated above ground stencils and markings when required.

**NOTE:**

Unscheduled painting performed by other than 341 MXS corrosion control specialists or 341 CES contracting personnel should be kept to an absolute minimum and only after considerations are made for personal safety, proper paint, tools, waste disposal and environmental protection.

4.2.4. Due to highlighting possible hazard areas and floor (non-tiled) edges in contrasting colors.

4.2.5. Done only after thick coats of paint are removed before new coats can be applied.

4.3. Scheduled painting is:

4.3.1. Biennial (720 days) corrosion inspections performed by 341 MXS during the Periodic Maintenance Program (PMP) visit. This consists of inspection, spot-treatment, and painting of corroded areas on AGE and assigned RPIE.

4.3.2. Long interval periodic refurbishment of the facility or equipment performed by Base Civil Engineers. The programmed interval for the 341st Space Wing missile facilities is 5 years. This large scale effort will be performed through the appropriate fiscal year Operation and Maintenance (O&M) Program.

**5. MAF Living Area Interior Colors.** MAF living area interior and exterior wall colors will be kept in accordance with established policy on pastel colors. Due to frequent changes in colors shades, no colors are specified in this plan for interior living areas. Request for changes to the existing colors will be coordinated through the appropriate squadron commander and sent to the protective coatings engineer Base Civil Engineering for final approval. Painting will be performed by 341 CES, contractor, or through the self-help program.

**6. Surfaces Not To Be Painted.**

6.1. Exterior exposed concrete (except backup lines and safety markings).

6.2. Asphalt shingles.

6.3. Surfaces not exposed to view, except as otherwise specified.

6.4. Concrete floors.

6.5. Interior exposed concrete, except as otherwise specified in accordance with local engineering instructions.

6.6. Acoustical units.

6.7. Top surface of steel floor plates that have resilient flooring.

6.8. Abrasive (non-skid) surface or abrasive floor plates.

6.9. Launch control center (LCC) steel liner plate, except where otherwise indicated.

6.10. Metal:

- 6.10.1. Radio Frequency Interference (RFI) shielding and surfaces which are in contact with RFI shielding, for example: electrical surge arrester room doors.
- 6.10.2. Closure surfaces (bearing plate).
- 6.10.3. Trigger mechanisms.
- 6.10.4. Actuator rod assemblies.
- 6.10.5. Hydraulic and pneumatic tubing, fitting and controls.
- 6.10.6. Blast door pins.
- 6.10.7. Shock isolator piston rod.
- 6.10.8. Blast valve assemblies.
- 6.10.9. Zerk fittings.
- 6.10.10. Ground straps, fittings, and connection points.
- 6.10.11. Drain covers in Lower Equipment Room #2 (all LFs).
- 6.10.12. Equipment drawers.
- 6.11. Wooden ladders.
- 6.12. Environmental (rubber) seals.
- 6.13. 564th MAF Flex Joint, Launch Control Equipment Building (LCEB) and LCC.

**7. Real Property Area.** Interior steel surfaces of battery storage compartments and other surfaces designated or specified to receive acid resistant paint shall be coated with a vinyl coating system conforming to the following physical characteristics:

- 7.1. Type of pigmentation: Titanium dioxide.
- 7.2. Vehicle: Polyvinyl chloride.
- 7.3. Percent of pigment: 16.5% max - 15.0% min.
- 7.4. Percentage of vehicle: 65.5% max - 64.5% min.
- 7.5. Total nonvolatile vehicle: 19.5% max - 18.8% min.
- 7.6. Method of application: As recommended by manufacturer.
- 7.7. Method of curing: Evaporation.
- 7.8. Oxidation: Nil.
- 7.9. Catalyzation: Nil.

**8. Real Property and RPIE Not Included.** This instruction contains complete coating instructions for all RP and RPIE which is not included in any other technical order. This is the sole reference for painting of these items. Other RP and RPIE can be found in the following technical orders:

- 8.1. TO 21M-LGM30F-101, *Weapon System Corrosion Control Treatment*.
- 8.2. TO 1-1-8, *Application and Removal of Organic Coatings, Aerospace and Non-Aerospace*.

8.3. TO 1-1-691, *Aircraft Weapons Systems -- Cleaning and Corrosion Control*.

**9. Surfaces to Be Painted.** The color scheme for 10th Missile Squadron (MS), 12th Missile Squadron (MS), and 490th Missile Squadron (MS) is addressed in **Attachment 1** for MAFs and **Attachment 2** for LFs. The color scheme for 564th Missile Squadron (MS) is addressed in **Attachment 3** for MAFs and **Attachment 4** for LFs. The index to paint colors is contained in **Attachment 5**. When index color #46 is allowed and exercised by squadron commanders, a color scheme for that squadron must be established and top coat painting will be done by facility managers or MCCMs. CCTs will treat and prime areas painted with the index color #46. Final coats will be applied by squadron facility managers or MCCMs.

J. GREGORY PAVLOVICH, Colonel, USAF  
Commander

## Attachment 1

## IDENTIFICATION OF SURFACES TO BE PAINTED, 10TH, 12TH, &amp; 490TH MAFS

Table A1.1. Equipment Above Ground.

<b>AREA</b>	<b>INDEX #</b>
<b><i>Telephone Equipment Room 101:</i></b>	
Panels and racks	41 or 46
Pipes and conduit	41 or 46
<b><i>Diesel Generator Room 102:</i></b>	
Diesel generator	41
Other equipment	41 or 46
<b><i>Environmental Systems Equipment Room 103:</i></b>	
AGE equipment	41
Pipes and conduit	41 or 46
<b><i>Security Office 104:</i></b>	
Casings	40 or 46
Electric panels, etc.	41 or 46
Fire alarm box	4 or 46
<b><i>Furnace and Utility Room 110:</i></b>	
Equipment	41 or 46
Hot water heater (top & bottom)	31 or 46
<b><i>Water Well Pump House:</i></b>	
Equipment (AC and Pumps)	41 or 46
Electric panels	41 or 46
<b><i>Other (Mechanical and Electrical Equipment Built-In or Otherwise Attached):</i></b>	
RPIE	41 or 46
Electrical panels	41 or 46
Panel lettering	28 or 46
<b><i>Exterior:</i></b>	
Door trim	45
Door	46

**Table A1.2. Equipment Below Ground.**

<b>AREA</b>	<b>INDEX #</b>
Elevator	41 or 46
Door raceways	29, 36 or 46
Metal work platforms/ladders	40 or 46
<b><i>Duct Work, Pipes and Conduits</i></b>	
If attached to painted surface	43
Unpainted surface, attached or not	40 or 46
Metal panel enclosure, walls interior and side facing LCC entrance	40 or 46
<b><i>Tunnel Junction:</i></b>	
Metal panel enclosure, wall exterior	41 or 46
Tunnel junction walls and ceiling	41 or 46
Metal panel enclosure, ceiling exterior	31 or 46
Metal panel closure, ceiling exterior	41 or 46
Blast door escape equipment	4 or 46
<b><i>LCC:</i></b>	
Chair rail, center plate	42 or 46
PAS platform and survival junction boxes, book racks	43
MCCC and DMCC consoles (basic)	43
Equipment racks	43
Locker	41 or 46
LCC junction boxes	41 or 46
Handles	29
Safety markings-base	6
Stripes	6
Acoustical enclosure walls	46
Lettering	31 or 46
Sides and cabinet	31 or 46
SACCS racks, sides	43
Oxygen regeneration unit	41 or 46
Drawer faces (487L equipment)	41
MCCC/DMCCC bookcases	46

Bed	41 or 46
Blast door, interior face panel	41 or 46
Escape tube hatch, Liner and bolts	1
Shock isolator and equipment faces	40 or 46
Panel lettering	31
EACU	41
Equipment base supports and S.I. bases	41 or 46
Ladders	41
Equipment sides	46
Cable trays and some conduits	41 or 46
Miscellaneous tanks, supports	41 or 46
TV/Radio mounting brackets	41 or 46
<b><i>Outside LCC</i></b>	
Hot water heater (top and bottom)	29
Exterior face, top, bottom, sides, and opening	1 or 46
ESA Room interior & door	41



## Attachment 2

## IDENTIFICATION OF SURFACES TO BE PAINTED, 10TH, 12TH, AND 490TH LF'S

Table A2.1. Topside.

<b>AREA</b>	<b>INDEX #</b>
Antennas	31
Rack rails	26
Wheel tracks	44
TE backup lines	6
Rails	26
Exposed ferrous surfaces of Debris Collector Assembly	26
Stenciling	6, 29/28
"A" vault door	21
All other metal surfaces	26

Table A2.2. PAH and Access Tube.

<b>AREA</b>	<b>INDEX #</b>
PAS interior surfaces	31
J-Ladder platform	36
"B" plug	41
PAH Door interior	26

Table A2.3. Upper Equipment Room.

<b>AREA</b>	<b>INDEX #</b>
Walls	31
Equipment racks	40
Interior of launch tube	31
Stenciling	6, 29/28
C/B control panel	41
Floor	41

Table A2.4. Lower Equipment Room.

<b>AREA</b>	<b>INDEX #</b>
Walls	31
Motor generator	21
"B" plug actuator, motor and control	21

Air conditioning unit	40
Foam interface area outline(1 inch strip)	29
Outside ESA room (including door panels)	31
Ballistic actuator	21
Stenciling	6, 29/28
ESA doors Interior	41
Mating surfaces	44
ESA Room floor	41
ESA Interior	41

**Table A2.5. LSB.**

<b>AREA</b>	<b>INDEX #</b>
Diesel generator	41
Chiller unit	41
C/B control panel	41
Day tank	40
Telephone control unit	40
Diesel fuel hand pump	40
Sump pump and control panel	41
Auto switching unit	41
Moisture accumulator	41
Stenciling	6, 29/28

## Attachment 3

## IDENTIFICATION OF SURFACES TO BE PAINTED, 564TH MAF'S

Table A3.1. Equipment Above Ground.

<b>AREA</b>	<b>INDEX #</b>
<b><i>Vehicle Storage Room 105:</i></b>	
Metal ladder and pipes	41 or 46
<b><i>Generator Room 106:</i></b>	
Diesel generator	41 or 9
Other equipment	41 or 46
<b><i>Telephone Equipment Room 112:</i></b>	
Paint platform	1
Panels/racks	41
<b><i>Water Treatment Room 113:</i></b>	
Equipment (panels and pumps)	41 or 46
Valves	41 or 46
Valve handles	13
<b><i>Heating Equipment Room 114:</i></b>	
Furnace and pump	41 or 46
Painted platform	1 or 46
Pump (hot water)	41 or 46
<b><i>Security Office Room 101:</i></b>	
Electrical panels	41
<b><i>Dining and Recreation Room 109:</i></b>	
Electrical panels	41 or 46
Cabinets	31
<b><i>Kitchen Room 116:</i></b>	
Electrical panels	41 or 46
Cabinets	31 or 46
<b><i>Corridor Room 125:</i></b>	
Electrical panels	41 or 46
<b><i>Utility Room 115:</i></b>	
Equipment	41 or 46
Hot water heater	41 or 46

<b><i>Duct Work Pipes and Conduits:</i></b>	
Attached to painted surfaces	43 or 46
Unpainted surfaces attached or not attached	40 or 46
<b><i>Exterior:</i></b>	
Door	46
Door trim	45
Roof vents and exterior ferrous metal	45
LCEB ventilation air intake and exhaust,top covers	45
LCEB ventilation air intake and exhaust,bottom cylindrical part	45
<b><i>Elevator Vestibule:</i></b>	
Metal work	40 or 46
<b><i>Elevator Machine Room:</i></b>	
Elevator motor and controller panel	13
Valves	41
Electrical panel	41
<b><i>Elevator and Shaft:</i></b>	
Elevator	40 or 46
Door raceways	28/29 or 46
Metal work, platform, ladder, and piping	40 or 46
<b><i>Other:</i></b>	
Mechanical and electrical equipment built-in or otherwise attached RPIE	40
Electrical panels and equipment	41
Panel lettering	29/28

**Table A3.2. Equipment Below Ground.**

<b>AREA</b>	<b>INDEX #</b>
<b><i>Tunnel Junction:</i></b>	
Tunnel arch (not concrete) above wainscot (metal)	41 or 46
Painted wainscot (not concrete 3'4" height metal)	41 or 46
Sump cover	40 or 46
Sump frames	1 or 46
Metal panel enclosure walls interior and side facing LCC entrance	40 or 46
Metal panel enclosure walls exterior(except side facing LCC entrance)	41 or 46
Blast door escape equipment	4 or 46
<b><i>LCC:</i></b>	
Metal panel enclosure ceiling interior	31 or 46
Metal panel enclosure walls exterior	41 or 46
Equipment bases, supports, and shock isolator bases	41 or 46
Ladders	41
Chair rails, center plate	42
Safety markings, base	29 or 46
Safety markings, stripes	6, 28/29 or 46
Duct work, pipes and conduits	9/41 or 46
Blast door, interior face	41 or 46
Blast door, exterior and opening	41 or 46
Escape tube platform	1
Equipment sides	46
Equipment faces and consoles	41
Lettering	31
SACDIN racks, sides	43 or 46
SACDIN racks, faces	43 or 46
Escape tube hatch ladder and railings	41
Panel lettering	28 or 29

ESA room, interior and exterior	41
Air conditioner, SWBD #2	41
Shock isolators	40
Shock isolator connectors	40
<b><i>Outside LCC:</i></b>	
Plate liner above wainscot (entire curved surface)	9/41 or 46
Blast door, interior faces	40 or 46
Exterior faces, top, bottom, sides and opening	1 or 46
<b><i>Underside LCC:</i></b>	
Exposed platform framing, supports and metal (except platform floor)	1
Unexposed platform framing and underside of floor plate	1
Safety markings	6, 28/29
Hot water heater, sides	31
Hot water heater, top and bottom	28/29
<b><i>LCEB:</i></b>	
Diesel fuel day tank and fixture	9/41
Diesel enclosure floor	41
Fire alarm panel	4
Cable air dryer compressor	4
<b><i>OTHER:</i></b>	
Doors and trim	41 or 46
Electrical panels	41
Miscellaneous tanks, and supports	41 or 46
Mechanical and electrical equipment and panels	41
Duct work, pipes, and conduits	41 or 46
Metal work platforms, and ladders	40 or 46
Safety markings	6 or 46

## Attachment 4

## IDENTIFICATION OF SURFACES TO BE PAINTED, 564TH LFS

Table A4.1. Equipment Above Ground.

<b>AREA</b>	<b>INDEX #</b>
<b>Surface:</b>	
Shaft stack	26
LEB lid	26
Pylon bottoms	26
Weather cover "A" pit	26
Top of PAH	26
Launcher closure door	26
Rack rail	26
Antennas (not surface)	31
TE Backup lines	6
All other ferrous metal surfaces	26
<b>LEB:</b>	
LEB blast door	41
Liner wall, middle	10
Liner wall, lower	1
Diesel generator and accessory equipment	41/10
Air dryer	41
Air conditioning equipment	41
<b>LER:</b>	
Access tube interior (PAS)	31
PAH door interior	26
1st Level floor	41
Walls 1st and 2nd levels	31
Electronic cabinets 1st and 2nd levels	40
Electronic drawers and D-box	40
2nd level floor	41
Electronic panels	41
Shock isolators	40
Shock isolator panel	40
Sump pump cover, launch tube	41
Stenciling	6, 29/28

Interior of launch tube	31
"B" plug actuator, motor and control	21
Ballistic actuator	21
Motor generator	21
ESA room interior	41
ESA room floor	41
ESA door panels (ext.)	30



## Attachment 5

## INDEX TO PAINT COLORS

Table A5.1. Index to Paint Colors.

<i>INDEX</i>	<i>COLOR CODE</i>	<i>COLOR</i>	<i>TYPE</i>	<i>SPEC #FSN-8010-00</i>
1	10076	Brown	Gloss Enamel	TT-E-489/298-2304
4	11136	Red	Gloss Enamel	TT-E-489/527-3198
6	23538	Yellow	Semigloss Enamel	TT-E-529/297-0585
9	13711	Ivory	Gloss Enamel	TT-E-489/NSL
10	27778	Ivory	Gloss Enamel	TT-E-489/NSL
13	14062	Dark Green	Gloss Enamel	TT-E-489/298-2296
21	15045	Strata Blue	Gloss Enamel	TT-E-489/298-2287
26	26521	Gray	Semigloss	TT-E-529/530-5565
28	17038	Black	Gloss Enamel	TT-E-488/079-3753
29	17038	Black	Gloss Enamel	TT-E-489/527-2050
31	17875	Appliance White	Gloss Enamel	TT-E-489/664-4761
36	37038	Black	Walkway Compound	MIL-W-5044 Type II 5610-00-641-0427
40	24518	Green	Semigloss Enamel	TT-E-529/530-5567
41	16376	Gray	Gloss Enamel	TT-E-489/298-2298
42	Special: Strip to polish aluminum surface.			
43	Special: Paint same as painted surface.			
44	Special: Does not require painting.			
45	10080	Dark Brown	Semigloss Enamel	TT-E-489/NSL
46	Special: To be determined by wing/squadron commander with approval by CE Missile Engineering		Gloss Enamel	TT-E-489, TT-E-527 TT-E-529/NSL

**NOTE:**

For surfaces previously coated with enamel, when removing the old coating to bare metal in large areas (60% or more of total surface) prime with MIL-P-26915 zinc dust primer and topcoat with two coats of MIL-C-83286 polyurethane coating of the same color number as specified in this instruction.

Thermo-Plastic coatings will be used by 341 MXS CCT Teams as authorized by 21M-LGM30F-101 in place of TT-E-489/589 and MIL-C-83286 coating systems.